

DOCKET NO.: 01203DIV2

**IN THE UNITED STATES PATENT & TRADEMARK OFFICE**

IN RE APPLICATION OF: :

Tristan BARBEYRON et al. :

SERIAL NO.: None assigned :  
(Division of application :  
Serial No. 09/269,731) :

FILED: Concurrently herewith :

FOR: GLYCOSYL HYDROLASE GENES AND THEIR USE FOR PRODUCING  
ENZYMES FOR THE BIO-DEGRADATION OF CARRAGEENANS

**PRELIMINARY AMENDMENT**

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

SIR:

Prior to Examination of this application on the merits, kindly amend the application  
as follows.

**IN THE SPECIFICATION**

Page 1, between lines 2 and 3, insert the following paragraph:

--CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a division of application Ser. No. 09/269,731, filed Apr. 5, 1999,  
which is a 371 of PCT/FR97/01768, filed October 6, 1997.--

Page 1, between lines 2 and 3, insert the heading: --BACKGROUND OF THE  
INVENTION--.

Page 3, between lines 2 and 3, insert the heading: --SUMMARY OF THE

INVENTION--.

Page 8, between lines 16 and 17, insert the heading: --BRIEF DESCRIPTION OF THE DRAWINGS--;

Page 8, replace the paragraph at line 20 to line 23 with the following paragraph:

--Fig. 1: The maximum similarity alignment, according to the method of Needleman and Wunsch [J. Mol. Biol. 48, 443-453 (1970)], of the amino acid sequence of the iota-carrageenase of *Alteromonas fortis* (SEQ ID NO: 2) (top part) and the iota-carrageenase of *C. drobachiensis* (SEQ ID NO: 4) (bottom part).--

Page 8, replace the paragraph at line 28 to line 31 with the following paragraph:

--Fig. 3: The maximum similarity alignment, according to the method of Needleman and Wunsch, J. Mol. Biol. 48, 443-453 (1970), of the amino acid sequence of the kappa-carrageenase of *Alteromonas carrageenovora* (SEQ ID NO: 6) (top part) and *Cytophaga drobachiensis* (SEQ ID NO: 8) (bottom part).--

### IN THE CLAIMS

Please cancel Claims 1-11 without prejudice or disclaimer of the subject matter thereof, and insert the following new claims:

--12. (New) An isolated nucleic acid molecule comprising a nucleic acid sequence encoding a protein having glycosyl hydrolase activity, wherein the nucleic acid sequence is selected from the group consisting of

- (a) a nucleic acid sequence that is SEQ ID NO: 5;
- (b) a nucleic acid sequence encoding a protein comprising the amino acid sequence of

SEQ ID NO: 6;

(c) a nucleic acid sequence that is SEQ ID NO: 7;

(d) a nucleic acid sequence encoding a protein comprising the amino acid sequence of SEQ ID NO: 8; and

(e) a nucleic acid sequence that is degenerate as a result of the genetic code to the nucleic acid sequence of (a), (b), (c) or (d).

13. (New) An isolated nucleic acid molecule according to claim 12, wherein the glycosyl hydrolase has a hydrophobic cluster analysis (HCA) score with the kappa-carrageenase of *Alteromonas carrageenovora* which is greater than or equal to 75% over the domain extending between amino acids 117 and 262 of the amino acid sequence of *Alteromonas carrageenovora* that is SEQ ID NO: 6.

14. (New) An isolated nucleic acid molecule according to claim 13, wherein the HCA score is greater than or equal to 80%.

15. (New) An isolated nucleic acid molecule according to claim 13, wherein the HCA score is greater than or equal to 85%.

16. (New) A vector comprising a nucleic acid molecule according to claim 12.

17. (New) A host cell genetically modified with a nucleic acid molecule according to claim 12 or with a vector comprising said nucleic acid molecule.

18. (New) A method of producing a protein having glycosyl hydrolase activity, the method comprising:

(a) obtaining the host cell of claim 17; and

(b) growing the host cell under conditions and for a time sufficient to produce the

protein.--

**REMARKS**

This divisional application is directed to subject matter not present in the allowed claims of application Serial No. 09/269,731. No new matter would be added to this application by entry of the amendment. Upon entry of this amendment, Claims 12-18 will be active in the application.

Favorable action is solicited.

Respectfully submitted,

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Nov 19, 2007

Date

703 412-1155

## AMENDMENT TO THE SPECIFICATION

The following paragraph was inserted on page 1, between lines 2 and 3:

### --CROSS-REFERENCE TO RELATED APPLICATIONS

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The paragraph on page 8, line 28 to line 31 was amended as follows:

--Fig. 3: The maximum similarity alignment, according to the method of Needleman and Wunsch, J. Mol. Biol. 48, 443-453 (1970), of the amino acid sequence of the kappa-carrageenase of *Alteromonas carrageenovora* (SEQ ID NO: 6) (top part) and *Cytophaga drobachiensis* (SEQ ID NO: 8) (bottom part).--

AMENDED CLAIMS

Claims 1-11 were canceled.

Claims 12-18 were added.